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10/771,409

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Michael Brand

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EXAMINER

ARMSTRONG, ANGELA A

ART UNIT

PAPER NUMBER

2626

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                       |  |
|------------------------------|--|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/771,409   | <b>Applicant(s)</b><br>BRAND, MICHAEL |  |
|                              | <b>Examiner</b><br>ANGELA A. ARMSTRONG | <b>Art Unit</b><br>2626               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-92 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is in response to Applicant's Remarks filed March 5, 2008.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14, 26-46, 58-72, and 79-86 are rejected under 35 U.S.C. 102(e) as being anticipated by Reich (US Patent Application No. 2002/0173955).

Regarding claim 1, Reich discloses a method of processing outputs of an automatic system for probabilistic detection of events, comprising: collecting statistics related to observed outputs of the automatic system; and using the statistics to process an original output sequence of the automatic system and produce an alternate output sequence, by at least one of supplementing and replacing at least part of the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 2, Reich discloses at least part of the alternate output sequence contains information that can be used by systems that can use the at least part of the original output sequence directly (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 3, Reich discloses data in the alternate output sequence includes confidence assessments regarding parts of at least one of the original and alternate output

sequences, where the confidence assessments supplement data in the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 4, Reich discloses data in the alternate output sequence includes confidence assessments regarding parts of at least one of the original and alternate output sequences, where the confidence assessments replace at least part of the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 5, Reich discloses the alternate output sequence includes information of a plurality of alternatives that can replace at least part of the original output sequence that can be used by systems that can use the at least part of the original output sequence directly (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 6, Reich discloses data in the alternate output sequence includes confidence assessments regarding parts of the alternatives, where the confidence assessments supplement data in the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 7, Reich discloses data in the alternate output sequence includes confidence assessments regarding parts of the alternatives, where the confidence assessments replace at least part of the original output sequence (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 8, Reich discloses collecting comprises at least one of noting and estimating correctness of at least one event that the automatic system detected (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 9, Reich discloses collecting comprises at least one of noting and estimating at least one detectable event that has transpired in correspondence with at least part of

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the original output sequence produced by the automatic system (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 10, Reich discloses the detected events involve word recognition (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 11, Reich discloses the automatic system is an automatic speech recognition system (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 12, Reich discloses the automatic speech recognition system operates on low-grade audio signals having word recognition precision below 50 percent; and wherein said method further comprises utilizing human transcription of the low- grade audio signals as a source for data relating to the statistics being collected (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 13, Reich discloses the automatic probabilistic event detection system is an automatic character recognition system (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 14, Reich discloses the alternate output sequence includes an alternate recognition score for at least one of the words (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 26, Reich discloses comprising repeating said collecting on several statistically different training materials (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 27, Reich discloses collecting uses samples of statistically different sets of materials as initial training material (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 28, Reich discloses identifying parameters that remain invariant between the statistically different sets of materials (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 29, Reich discloses identifying improves estimation of at least one of the parameters (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 30, Reich discloses identifying is used to enable training when available statistically self-similar sets of materials are too small to allow effective training (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 31, Reich discloses identifying is used to increase effectiveness of further training on material that is not statistically similar to initial training material (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claim 32, Reich discloses material used for said collecting is statistically similar to material used during said using (paragraphs [0020, 0022-0023, 0025-0036]).

Regarding claims 33-46, 58-72, and 79-86, the claims are similar in scope and content to claims 1-14 and 26-46 and are rejected under similar rationale.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-25, 47-57, 73-78 and 87-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reich in view of McDonough (US Patent No. 5,625,748).

Regarding claims 15-25, 47-57, 73-78 and 87-92, Reich fails to teach building a first model modeling behavior of the automatic system as a process with at least one inner state,

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which may be unrelated to inner states of the automatic system, and inferring the at least one inner state of the process from the observed outputs of the automatic system; building a second model, based on the statistics obtained by said collecting, to infer data to at least one of supplement and replace at least part of the original output sequence from the at least one inner state of the process in the first model. McDonough discloses a system for topic discrimination using posterior probability scores or confidence scores, such that topic modeling is the process of constructing a probability model for the word or event occurrence patterns observed in given speech; probability models are trained using sets of word occurrence statistics; and is used to select a subset of the potential speech events (Figures 1-3; col. 5, line 42 continuing to col. 6, line 53 and col. 11, line 65 continuing to col. 12, line 64), and it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Reich so as to improve the performance of the recognizer by making direct use of the confidence scores, as suggested by McDonough at col. 4, lines 15-20.

### ***Response to Arguments***

Applicant's arguments filed March 5, 2008, have been fully considered but they are not persuasive.

Applicant argues Reich does not teach processing outputs of an automatic system for probabilistic detection of events. Applicant also argues Reich does not teach collecting statistics related to observed outputs of the automatic system. The Examiner cannot concur. Reich provides statistics of the word recognition candidates that are generated by the automatic speech recognizer. The word candidates are judged and the word candidates which meet or exceed a confidence score or threshold are judged to be the N-best hypothesis word candidates. The

word candidates are presented to the user who selects the desired word, thereby supplementing or replacing the original sequence.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA A. ARMSTRONG whose telephone number is (571)272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela A Armstrong/  
Primary Examiner, Art Unit 2626